



Nottingham 40612 – Bridge 141/127 – NH Route 152 over North River

Public Officials Meeting

February 8, 2021

Project Location Map



NOTTINGHAM-NH RT. 152 OVER NORTH RIVER



Existing Bridge Details

- Constructed in 1925; Widened in 1970
- 17' Clear Span: steel beams with concrete jack arch deck on faced masonry abutment (original); steel beams with conventional concrete deck on piles (widened section)
- 29'-0" roadway width (3'-6" shoulders on each side)
- 3,300 vehicles per day, 7% trucks
- Added to Red List in 2012

Site Photos



Looking South Along NH Rt.152



Looking North Along NH Rt.152

Site Photos



Looking Downstream



Looking Upstream

Bridge Condition



Bridge Downstream Elevation



Bridge Upstream Elevation

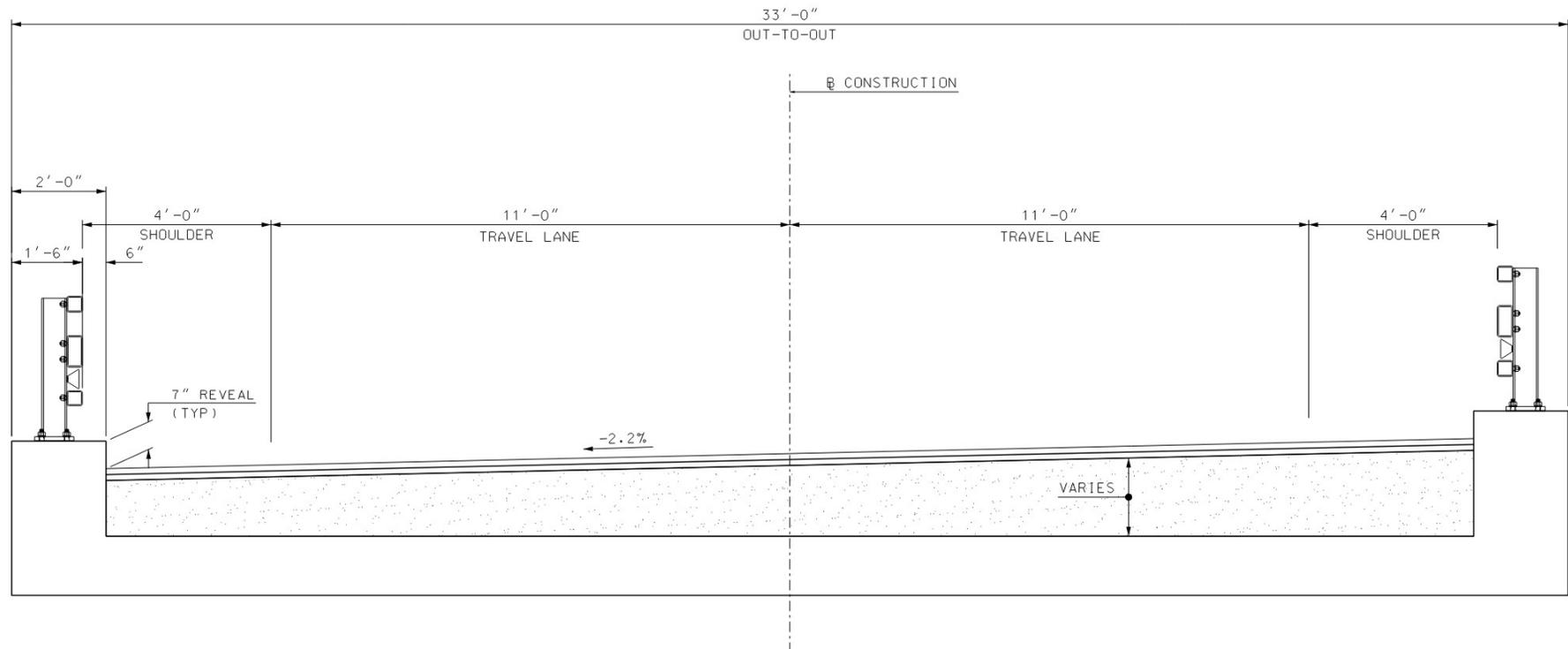
Issues to Address

- Deterioration of Bridge Substructure
 - Bridge is on State Red List
 - Substructure is in Condition State 3 (Serious)
- Hydraulic opening

Bridge Replacement

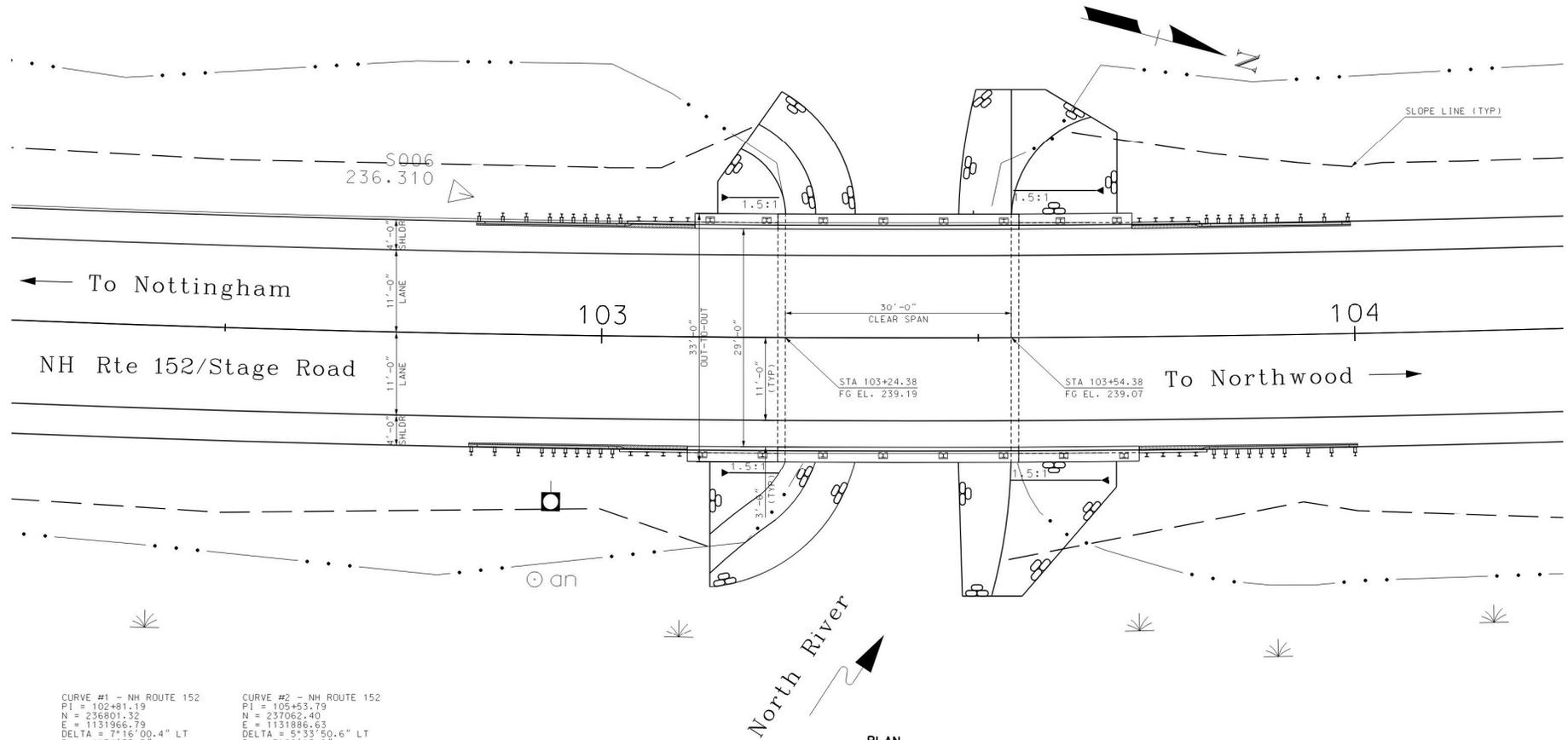
- Proposed bridge to be a single span (30-foot clear opening). Bridge alternatives include:
 - Precast Concrete Rigid Frame supported on precast concrete pedestal walls and spread footings
 - Precast Prestressed Concrete Deck Beams supported on precast integral abutments on steel piles
- Bridge span will address hydraulic opening deficiencies and provide a wildlife path through the structure
 - the proposed span does not satisfy the stream crossing rules (Alternative Design process required))
 - Compliant span length = 66'-0" clear
- Bridge width anticipated to be 30'-0" wide
 - 11'-0" travel lanes and 4'-0" shoulders
 - 3-bar steel rail anticipated

Bridge Replacement



TYPICAL DECK SECTION

Bridge Span



| | |
|-------------------------|-------------------------|
| CURVE #1 - NH ROUTE 152 | CURVE #2 - NH ROUTE 152 |
| PI = 102+81.19 | PI = 105+53.79 |
| N = 236801.32 | N = 237062.40 |
| E = 1131966.79 | E = 1131886.63 |
| DELTA = 7°16'00.4" LT | DELTA = 5°33'50.6" LT |
| D = 1°54'35.5" | D = 3°22'13.2" |
| R = 3000.00' | R = 1700.00' |
| T = 190.50' | T = 82.61' |
| L = 380.49' | L = 165.09' |
| E = 6.04' | E = 2.01' |

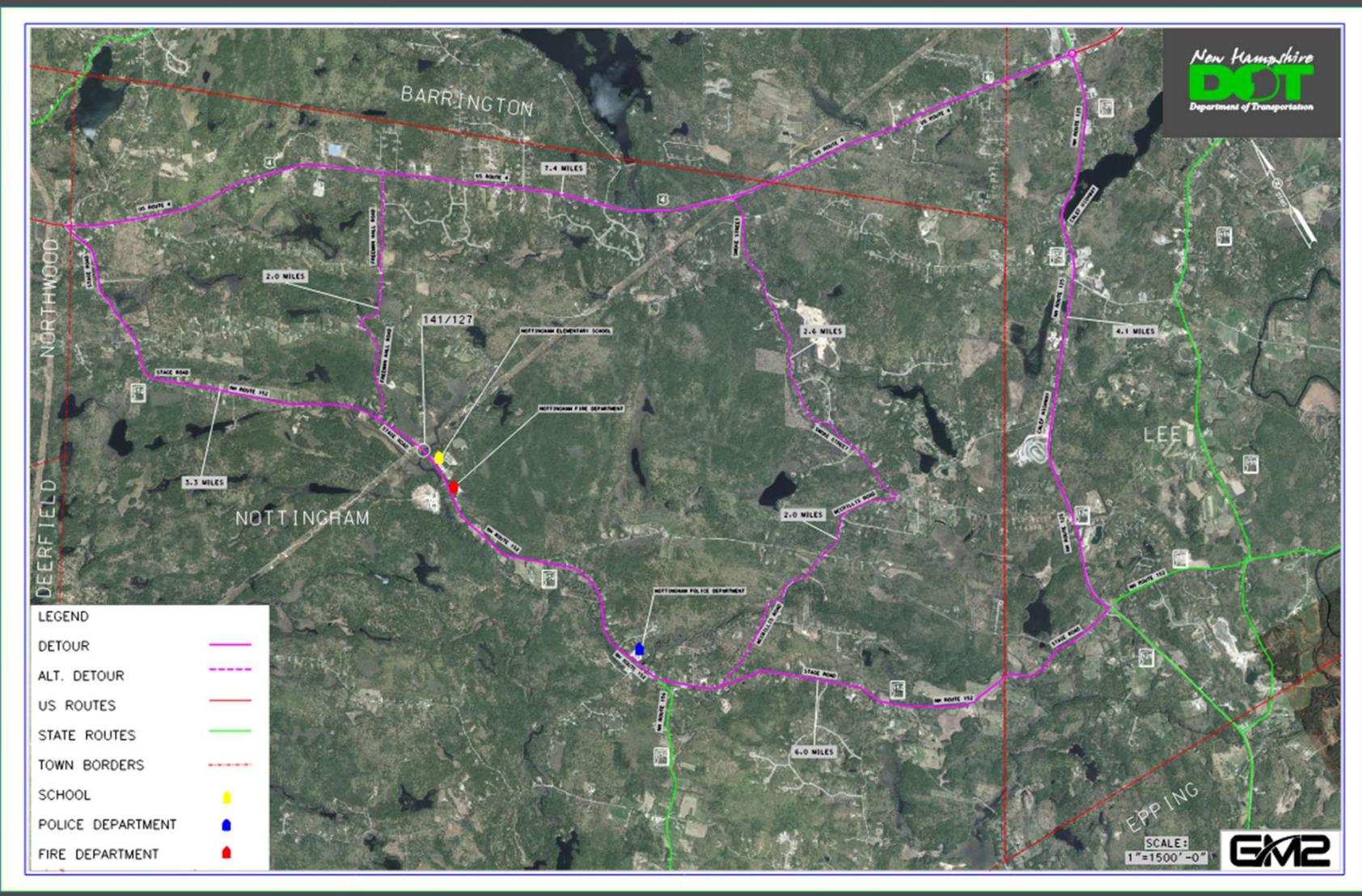
PLAN
SCALE: 1/4" = 10'

Maintenance of Traffic

Alternatives:

- Accelerated Bridge Construction (ABC) with bridge closure
 - Detour traffic using NH Rt 152, NH Rt 125, and US Route 4
 - Approximate closure duration of NH Rt 152 = 1 month
 - Anticipated construction duration = 1 construction season
- Phased construction, maintaining one lane of traffic in each direction on NH Rt 152
 - Requires additional widening of proposed structure
 - Existing masonry abutment makes phase construction more difficult
 - Anticipated construction duration = 2 construction seasons
- Offline temporary bridge
 - Additional impacts to wetlands (North River is a Designated River; part of Lamprey River Watershed)
 - 70 to 80 foot span for temporary bridge
 - Anticipated construction duration = 2 construction seasons

Detour Traffic Control for ABC Alternative



Cultural Resources: Section 106 Review

- Bridge: not eligible
 - Constructed in 1925 and rebuilt in 1970
- Archeological survey
 - No further survey recommended
- Some surrounding properties > 50 y.o.
 - No impacts with preferred alternative



FIGURE 10: Photo of Nottingham Bridge 141/127 on bridge card dated May 7, 1941, showing east elevation before 1970 widening.

Natural Resources

- North River and Wetlands
 - Tier 3 stream crossing
 - Designated river
 - Protected shoreland
 - Wetland permit- standard dredge & fill
 - Priority Resource Area
- Federally listed species- plant & bat
- State listed species- turtles, snake, mussel & fish
- Wildlife Corridor- wildlife shelf being considered



Your Input is Needed

- Preferred Closure Time (Spring, Summer, or Fall) for ABC
- Emergency Response Routes
- Mutual Aid
- School Bus Routes
- Historic Concerns
- Past Flooding Concerns
- Bicycle and Pedestrian Concerns
- Other Concerns

Next Steps

- Hold a Public Informational Meeting several months from now
- Develop and evaluate alternatives based on the Town's input
- Present findings to Cultural and Natural Resource Agencies to get their input and comments
- Complete the NEPA process (National Environmental Policy Act) for environmental permitting
- Construction scheduled to begin in 2024-2025

Questions?

